



UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

AS

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/475,544 12/30/99 PUTNAM

M PGI6044P0020

EXAMINER

IM52/0827

ROCKEY MILNAMOW & KATZ LTD
TWO PRUDENTIAL PLAZA
SUITE 4700
180 NORTH STETSON AVENUE
CHICAGO IL 60601

TORRES VELAZQUEZ, N

ART UNIT	PAPER NUMBER
----------	--------------

1771

DATE MAILED:

08/27/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/475,544

Applicant(s)

PUTNAM ET AL.

Examiner

Norca L. Torres-Velazquez

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-92 is/are pending in the application.
- 4a) Of the above claim(s) 14-44 and 52-75 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 45-51 and 76-92 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-13, 45-51 and 76-92, drawn to a nonwoven fabric, classified in class 442, subclasses 401, 408.
 - II. Claims 14-35 and 52-75, drawn to a method for producing a nonwoven fabric, classified in class 264, various subclasses.
 - III. Claims 36-44, drawn to an apparatus, classified in class 162, subclass 232.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by air entangling the unbonded web.
3. Inventions III and I are related as apparatus and product made. The inventions in this relationship are distinct if either or both of the following can be shown: (1) that the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a different product or (2) that the product as claimed can be made by another and materially different apparatus (MPEP § 806.05(g)). In this case the product can be made by using an apparatus comprising an air jet entangling station.
4. Inventions II and III are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another

Art Unit: 1771

materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be used to produce patterned fabrics.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Stephen D. Geimer on August 16, 2001 a provisional election was made with traverse to prosecute the invention of group I, claims 1-13. ^{4 45-51}
₇₆₋₉₂
Affirmation of this election must be made by applicant in replying to this Office action. Claims 14-44 and 52-75 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

9. Claim 11 recites the limitation "said continuous filaments" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Art Unit: 1771

10. Claims 45-51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

“Substantially” is a broad term. - In re Nehrenberg (CCPA) 126 USPQ 383.

In claims 45 and 47, the phrase “free of filament ends intermediate end portions” is not clear, please clarify the language. *still confusing*

Regarding claim 51, the language in this claim is very confusing; it is not clear to what fabric the percentages of weight are referring. Is the 10% to 60% of the weight referring to just the laminations comprising the polypropylene thermoplastic filaments only or it also refers to the plural laminations that comprise polyethylene? Is the 40% to 90% referring to only the polyethylene laminations or the combinations of all laminations in the fabric? Claim 51 needs to be corrected.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-7, 11-12 and 47-50 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over SUSKIND et al. (US Patent 4,808,467).

SUSKIND et al. discloses a spunlaced fabric suitable for disposable medical applications that is produced by hydraulically entangling wood pulp and staple fibers with a continuous

Art Unit: 1771

filament base web producing a nonapertured high strength fabric, and treating the fabric with a fluorocarbon water repellant. (Column 1, lines 12-17).

The reference teaches the use of polyethylene, polypropylene, polyester and nylon as polymers from which the continuous filaments are made. (Column 3, lines 7-11). The reference also discloses that the basis weight of the finished fabric may range from about 0.8 ounce per square yard to about four ounces per square yard (which is equivalent to 27.2 gsm –135.8 gsm). (Column 3, lines 30-32).

SUSKIND et al. further discloses that the high strength nonwoven fabric comprises a wet laid second fibrous web consisting essentially of 50 to 90 weight percent wood pulp and 10 to 50 weight percent staple length fibers intimately hydroentangled with one another and with the base web. (Refer to claim 1). The reference also discloses that the basis weight of the continuous filament base web is in the range of from about 0.15 to 0.8 ounce per square yard (5.1 to 27.1 g/m²). (Refer to claim 10).

In example I (Column 5), the fibers of the two webs are hydroentangled by subjecting them to the action of two rows of water jets operating at a manifold pressure of 200 psig, four rows at a manifold pressure of 600 psig, four at 1200 psig and four at 1800 psig.

Regarding claim 47, a variation of the bonding temperatures of thermoplastic filaments in adjacent laminations depends on the polymeric constitution of these; therefore, this can be achieved by using different polymers such as the ones taught by SUSKIND et al. (Refer to Column 3, lines 7-11).

It is noted that SUSKIND et al. is silent with respect to the claimed interengaged packed loops. However, it is reasonable to presume that the claimed interengaged packed loops are

Art Unit: 1771

inherent to the invention of SUSKIND et al. Support for said presumption is found in the use of the same starting materials (i.e. continuous filament base web), like processes of making the articles (i.e., the reference uses hydroentangling pressures that read on Applicant's specification), and the production of similar end products (i.e., fabric for medical apparel, etc...). The burden is upon the Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594. In the alternative, the presently claimed hydroentanglement in the form of interengaged packed loops would obviously have been provided as a result of the inventive high strength hydroentangled nonwoven fabric of the SUSKIND et al. reference. *Note In re Best*, 195 USPQ 433.

13. Claims 8-10, 13 and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over SUSKIND et al. (US Patent 4,808,467) as described above.

Regarding the Applicant's ranges for the limitations of machine direction elongation, cross direction elongation, fiber entanglement frequency, fiber entanglement completeness value and fiber interlock value are broad and encompass typical values that are found in the prior art. For example, as in the BUNTING et al. reference disclosed by Applicants. The reference discloses a textile-like nonwoven fabric with a fiber-interlock value of at least 10 and internal bond values of at least 0.2 foot-pound and having at least 10 discrete parallel regions of three-dimensional fiber interentanglement per inch. (Refer to Claim 1). Further each of the elements are recognized as result effective variables in this field of endeavor and it has been held that discovering optimum values would have been or result effective variables involves only routine experimentation.

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 46-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over SUSKIND et al. as applied to claims 1-13 and 45-50 above, and further in view of MARMON et al. (US 6,200,669 B1).

The SUSKIND et al. reference fails to teach nonwoven fabrics of continuous filaments that are initially thermally point bonded prior to being hydroentangled.

MARMON et al. discloses nonwoven fabrics that are made by bonding the fibers of a substrate by thermal point bonding and then hydroentangling the bonded multicomponent fibers with a water pressure from about 400 to 3000 psi. (Abstract) The reference further discloses that the entangled web may have bond areas therein comprising at least about 5% of the surface area of the web. The bond areas are at least partially degraded with a portion of the continuous fibers within the bond areas separated from said bond points. (Column 2, lines 66-67 to column 3, line 1).

Since SUSKIND et al. and MARMON et al. are both from the same field of endeavor; the purpose disclosed by MARMON et al. would have been recognized in the pertinent art of SUSKIND et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the nonwoven fabric disclosed by SUSKIND et al. and provide

Art Unit: 1771

it with layers of nonwoven fabric of continuous filaments initially thermally point bonded for the purpose of producing a cloth-like fee as well as improved barrier properties. Further to produce fabrics with considerably increased softness relative to pre-entangled bonded substrate as disclosed by MARMON et al. (Refer to Column 12, lines 32-36).

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

RADWANSKI (US 4,970,104) discloses nonwoven materials that include at least one nonwoven web, with the at least one web being bonded by entangle bonding in spots, such entangle bonding being provided by hydraulic entangling. By spot-entangle-bonding (jet treating) the webs, utilizing hydraulic entangling to provide the spot-entangle-bonds, conventional bonding methods need not be used, whereby good hand and drape properties can be retained after bonding, and the overall bulk of the material can be maintained, while providing a product that does not easily delaminate and that is stretchable and resilient. (Refer to abstract)

The reference further teaches that spot-entangle-bonded materials, including laminates, have a wide variety of uses, from disposables, e.g., absorbents, wipes and outer covers, etc., to durable goods. (Column 5, lines 63-67).

EVANS (US Patent 3,494,821) discloses nonwoven fabrics of highly entangled staple fibers reinforced with fibers or strands (continuous filaments or yarns). The reference teaches the use of 3% to 90% of substantially continuous fibrous strands in the nonwoven fabrics; also teaches a fiber entanglement frequency for non-bonded fabric being at least 10 per inch with a fiber entanglement completeness of at least 0.5. (Column 2, lines 66-72). EVANS teaches that

Art Unit: 1771

"substantially continuous fibrous strands" includes separate continuous filaments, multiple continuous filament yarns, and spun staple yarns. (Column 2, lines 32-34).

EVANS further discloses that the fibers in tangled regions turn, wind, twist back-and-forth and pass about one another in all three dimensions of the structure in so intricate fashion that fibers interlock with one another when the fabric is subjected to stress to thereby provide coherency and strength to the fabric. (Refer to claim 1).


SIMPSONS et al. (US Patent 5,023,130) discloses a process for hydroentangling continuous polyolefin filament fibers to form a fabric web. (Abs)

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 703-306-5714. The examiner can normally be reached on Monday-Thursday 7:30-5:00 pm and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1495.

nl
August 24, 2001


CHERYL JUSKA
PATENT EXAMINER